

YAMAHA

MSX

MUSIC COMPUTER ORDINATEUR MUSICAL

XSMM

OWNER'S MANUAL
MODE D'EMPLOI

NIPPON GAKKI CO., LTD.
PRINTED IN JAPAN

FCC INFORMATION (for United States Customers Only)

While the following statement is provided to comply with FCC regulations in the United States, the corrective measures listed are applicable worldwide.

“WARNING – This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.”

The CX5MII and its accessories have been tested and certified to be in compliance with the limits established for this class of equipment pursuant to FCC Rules Part 15, Subpart J. These limits were established to provide a reasonable measure of protection against such interference; however, this does not guarantee that interference will not occur. If the CX5MII equipment is suspected of causing interference with other electronic equipment, verification can be made by turning off the CX5MII.

If the interference continues, then the CX5MII is not the source of the interference. If the CX5MII does appear to be the source of the interference, you should try to correct the situation by one or more of the following measures.

- Relocate either the CX5MII and its accessories or the electronic equipment that is being affected by the interference.
- Utilize power outlets for the CX5MII and the equipment being affected that are on different branch circuits (utilizing different circuit breakers or fuses), or install AC line filters.
- In the case of radio interference, relocate the antenna. If the antenna cable is 300 ohm ribbon lead, have it changed to 75 ohm coaxial cable (utilizing the necessary transformer/adaptors at either end, as required to match the cable).

If these corrective measures do not produce satisfactory results, please contact a Yamaha Retailer authorized to sell this product for suggestions and/or corrective measures. If you cannot locate a Yamaha Retailer authorized to sell this product in your general area, please contact the Yamaha International Corporation. MMC Service Division, 6600 Orangethorpe Avenue, Buena Park, CA 90620, USA.

If for any reason you should need additional information relating to radio and TV interference, you may find a booklet prepared by the Federal Communications Commission helpful: “How to Identify and Resolve Radio/TV Interference Problems.” This booklet, Stock #004-000-00345-4, is available from the U.S. Government Printing Office, Washington D.C. 20402.



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INTRODUCTION

FEATURES OF THE CX5MII MUSIC COMPUTER

- The CX5MII is an extremely versatile personal computer which conforms to MSX standard specifications. The unique feature of the CX5MII is its built-in FM Sound Synthesizer unit SFGII. (Please refer to the FM SOUND SYNTHESIZER UNIT, p.23.)
- 64K bytes RAM is standard. This means that the MSX Disk Operating System (MSX-DOS, not included) will run on the CX5MII. MSX-DOS opens up a whole new world of disk-based software for MSX machines. It provides extensive commands that allow you to manipulate information stored on disks. (Floppy Disk Drive FD-05 and MSX-DOS System Disk required.)
- Any software cartridge or peripheral device specified as being MSX compatible may be used with the CX5MII.
- Adjustable rear feet allow you to set the most comfortable angle for using the keyboard.
- A printer interface is standard.
- Two cartridge slots allow you greater flexibility.
For instance, you can insert a Floppy Disk interface (such as the Yamaha FD-051) in one, and a disk-compatible software cartridge in the other.
- A handy reset button lets you initialize the CX5MII without turning off the power.
- Separate audio and video outputs make for easy connection.

CX5MII ACCORDING TO AREA

There are different models of the CX5MII Music Computer, according to area. This manual refers to the computer as only the CX5MII, referring to all models. Where reference to a particular model is called for, the specific model number pertaining to the area in question will be used. The different model numbers, and the areas to which they pertain, are as follows:

The model of your CX5MII is specified on the back panel label. Consult the part of this manual for your particular model.

CX5MIIU – U.S.A., Taiwan, Central and South America

CX5MIIC – Canada

CX5MIIG – West Germany, Some European countries

CX5MIIS – Scandinavian countries

CX5MIIE – United Kingdom

CX5MIIF – France

CX5MIIB – Italy, Spain, etc.

CX5MIIA – Australia and New Zealand

NOTE:

The model differentiation is based on differences in television standards and power sources by countries or areas.

PRECAUTIONS

Please observe the following precautions regarding the CX5MII:

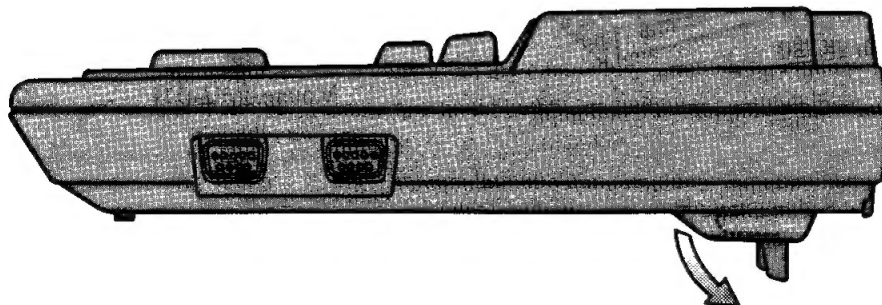
- a) Turn off power and disconnect the power cord if you feel something is wrong with the CX5MII.
- b) Handle the CX5MII with care. Avoid dropping or knocking it.
- c) Don't attempt to disassemble the CX5MII. Internal components may be damaged by doing so, and there are no user-serviceable parts inside.
- d) Keep the CX5MII dry.
- e) Handle all connection cords carefully.
- f) Disconnect the power during an electrical storm.
- g) Keep the CX5MII in a cool, dry, clean environment. Dust, heat, or excess humidity can cause corrosion or deterioration of connectors, leading to premature malfunction.
- h) Clean the CX5MII only with a moist or dry cloth. Do not use chemical cleaners or solvents.
- i) Keep the air vents unobstructed for proper cooling.
- j) Make sure power switch is turned off when making connections.

NOTE:

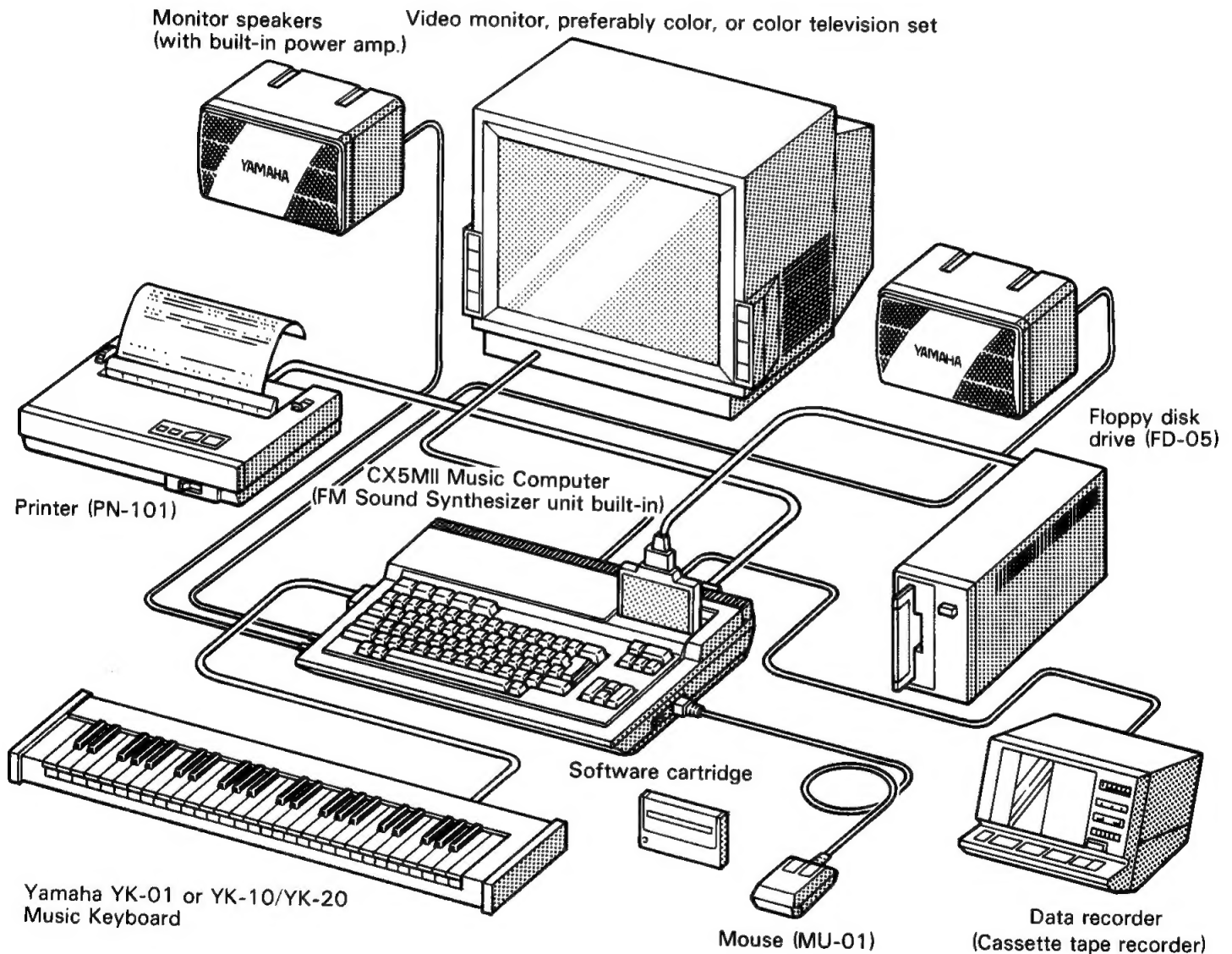
With computers, unlike some typewriters, the upper case letter O is not the same as the number Zero (0). Also, the lower case letter el (l) is not the same as the number 1. Be sure to type the correct characters.

ADJUSTABLE KEYBOARD ANGLE

Many people find a slightly tilted keyboard more comfortable for typing. To tilt the keyboard, unfold the two supports.



BASIC SYSTEM CONFIGURATION



Connecting Cable

Connect peripherals using the following cables.

- RF cable (included except for CX5MIIF)
- RGB cable (included only with CX5MIIF)
- Antenna switch box (included except for CX5MIIF)
- Audio and video connector cable
- Floppy disk interface cable
- Cassette connection cable (included)
- Printer cable
- MIDI cable

Peripherals

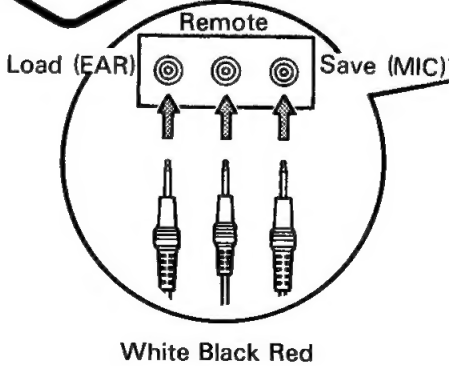
The following peripherals may be connected.

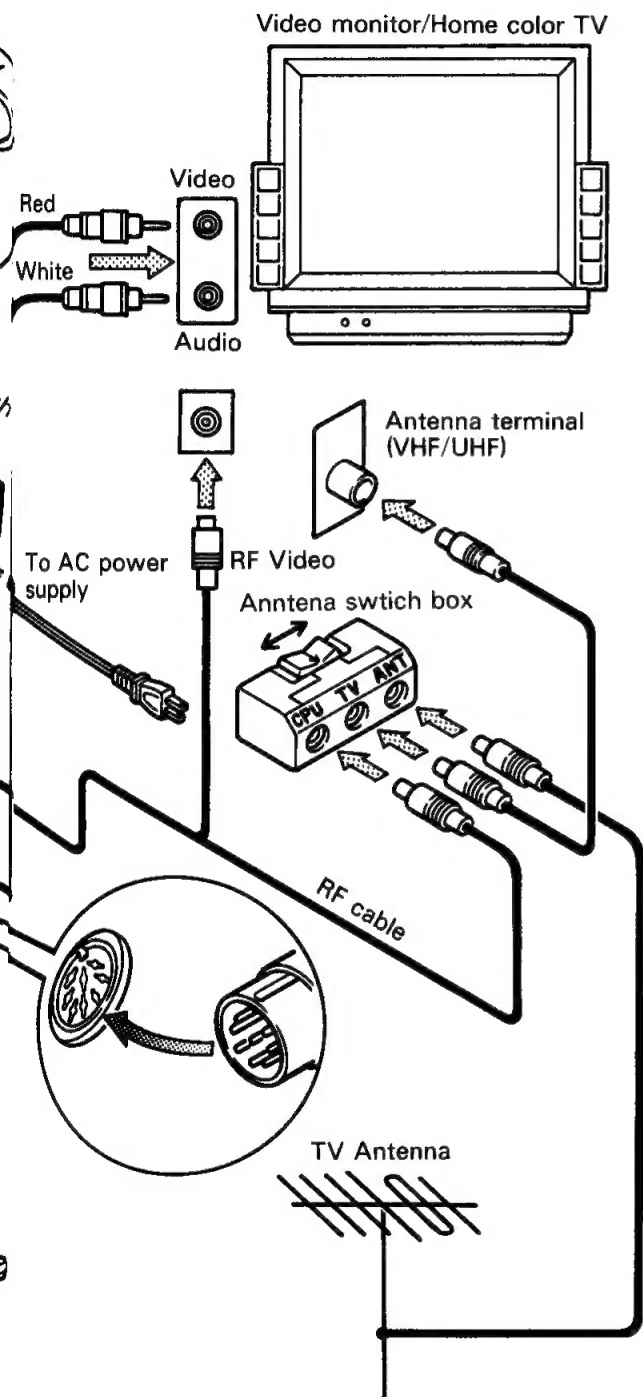
- TV (Video Monitor or Home Color TV)
- Data Recorder (Cassette Tape Recorder)
- Floppy Disk Drive (FD-05)
- Music keyboard (YK-01 or YK-10/YK-20)
- Digital keyboard with MIDI connector (DX series, etc.)
- Joysticks
- Mouse (MU-01)
- Printer (PN-101)

NOTE:

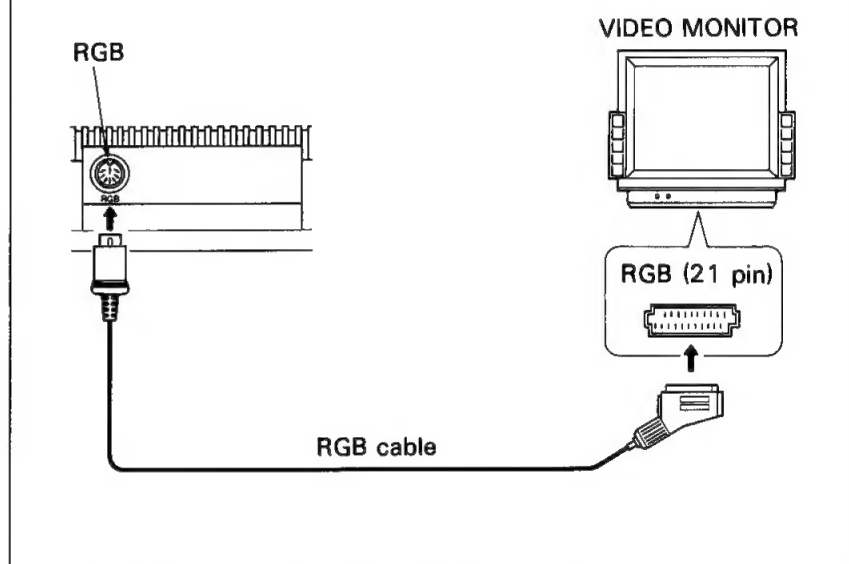
See pp.6 ~ 7 for diagram of connections.

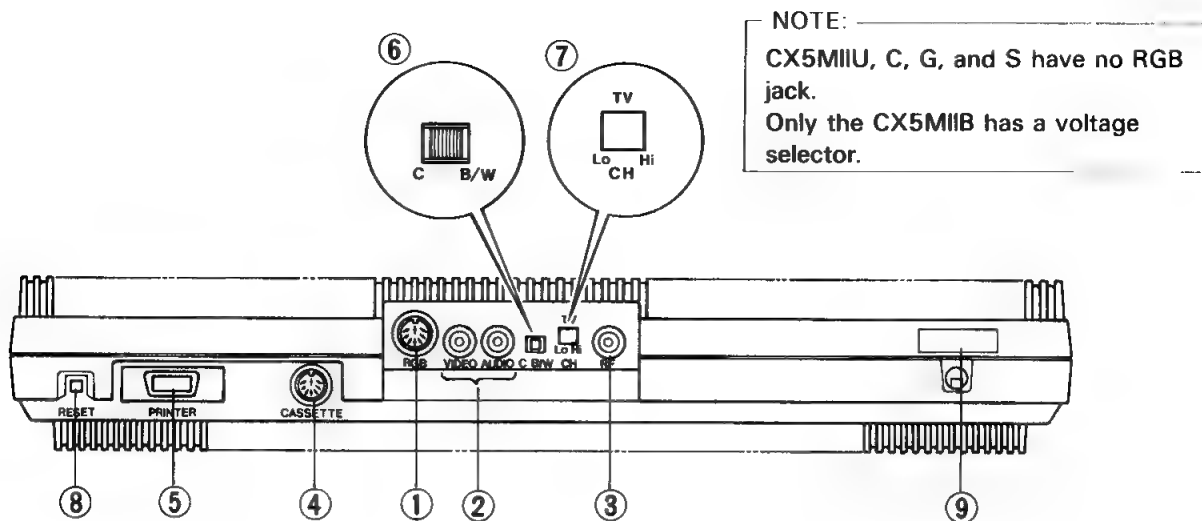
[REDACTED]





**CX5MIIF SPEC (for France)
RGB cable connection**





Display Connections

① RGB

This is a video output to connect the MSX to a display screen having an RGB input. RGB will produce the highest quality image, since each primary color (Red, Green and Blue) are sent separately.

② Audio/Video

Audio Sounds that the MSX produces (beep sounds and TSG output) are sent out from this jack. Connect it to the audio input of your television or to an amp/speaker.

Video This is a video output to connect the MSX to a standard computer display screen.

③ RF

If your television has an RF input, you may connect the MSX RF output directly to the television to the RF input.

When using a television with only antenna terminals (no RF input), you can connect the MSX RF output to the antenna terminals via the AS-01 switch box. Set the AS-01 switch according to whether you want to watch TV or use the computer.

Switches

⑥ C B/W

This switch selects Color or Black and White video output. Set it according to the type of video screen you are using. (This will not affect the RGB or RF outputs.)

⑦ TV Lo/Hi

This switch changes channels of the RF output. When you are using a television (connected to the RF output) as the video screen, select the channel that is not being use. (This will affect only the RF output.)

RF OUTPUT CHANNEL

Model	Area		Lo	Hi
CX5MIU, C A	U. S., Canada Australia	VHF	3	4
CX5MIIB, S E, F, B	Others	UHF	36	

⑧ Reset Switch

Pressing and releasing this switch will reset the MSX to the same initial condition as when the power is turned on. All RAM memory will be erased, and if there is a program cartridge in a slot, it will start again from the beginning.

Other Connections

④ Cassette

Connecting a cassette data recorder to this jack lets you store programs and data on tape.

⑤ Printer

Connecting a printer to this jack will let you print out files or make a hard copy of the screen.

⑨ CX5MIIB Voltage Selection

This model is for use where the AC power supply is 220-240V. There is a gummed label above the AC power cable that indicates this. Under this label, there is a switch, and you may set the CX5MIIB for 110-120V use by resetting this switch. Peel off the label and set the switch for the power in your area.

OPERATION

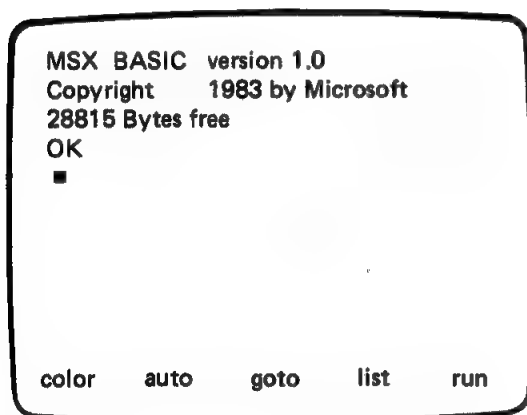
OPERATING THE CX5MII

Check Connections

1. Check Connections

Make sure all connections are properly made, according to the connection diagrams in this manual. If any connections are improperly made, make sure you turn power off to all components before remedying the situation.

2. Turn on the power switch of the CX5MII. When nothing is plugged into the ROM cartridge slots, the computer will enter the MSX Basic mode, and the screen display will be as follows:



3. When the screen display does not correspond to that shown here, turn off the main power switch, wait for at least 30 seconds, and turn on the power switch once again. If the screen display is still incorrect, check the following:

Check

- (1) Check to see that the power cord and switches of the video monitor (or TV) are correctly set, and is the monitor (TV) connected to the power mains?
- (2) Are the brightness and contrast of the screen set correctly?
- (3) Does the fine tuning control knob of the TV require adjustment?

THE CX5MII KEYBOARD

Using the CX5MII Keyboard

The CX5MII keyboard conforms to ASCII standards. The keyboard will function in the normal mode (as an alphanumeric keyboard) and in a special graphics mode as well (special graphics characters are accessed by specially designated keys on the keyboard). A repeat function is built in, so that if a key is pressed and held for longer than one second, the same character will be displayed repeatedly until the key is released. Many of the keys will serve different functions according to the particular CX5MII application program in use (MSX Basic, Yamaha FM Music Composer software cartridge, etc.). These multiple functions are explained in the corresponding operating manuals for the individual software packages.

Accent Marks

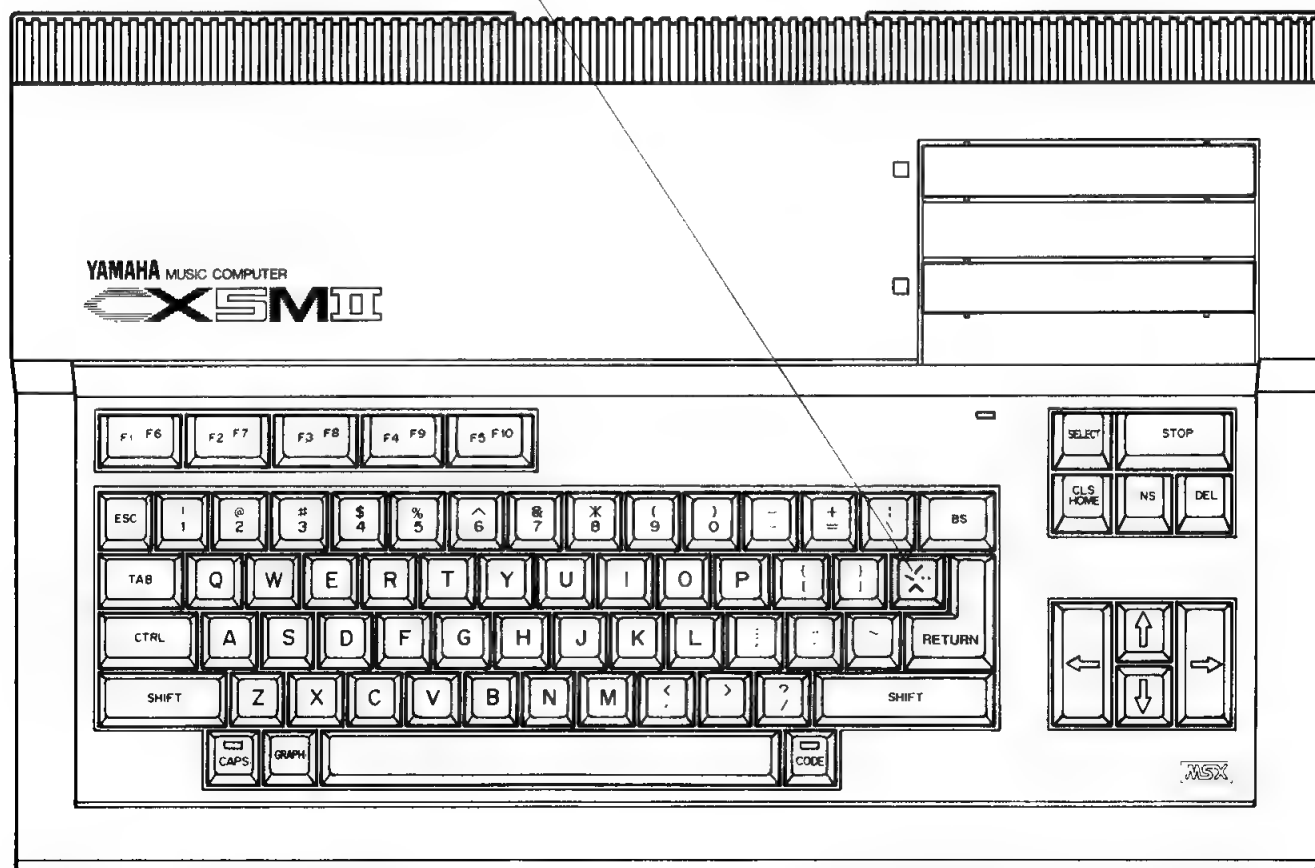
Pressing the accent mark key, or the shift and code keys with the dead key, will cause accent marks to be added to the letters a, e, i, o, and u when those letter keys are pressed. This will not operate with other keys.

Condition	Function
Normal	Accent grave (`)
Shift	Accent egu (´)
Graph	Accent grave (`)
Graph + shift	Accent egu (´)
Code	Accent circumflex (^)
Code + shift	Umlaut (¨)

NOTE:

For a list of characters produced using the **SHIFT** and **CODE** keys, See pp.50 ~ 51.

Accent Mark



NOTE: —

The CX5MIIF has a different keyboard layout. (See the same page number of the French language section.)

Function keys

Function keys allow you to execute certain designated functions by simply pressing the designated key, rather than entering the full command from the keyboard. When using the CX5MII as an entry level computer for programming, these keys access the various commands shown in the diagram. These Basic commands are also displayed on the bottom of the monitor screen. When using Yamaha music software cartridges (FM Music Composer, Voicing Program, etc.) these keys will execute particular commands within the framework of the particular software program in use.

ESC key (Escape)

Performs the Escape function while programming in MSX Basic. Does not perform a direct function outside of MSX Basic.

TAB key

This key will move the cursor 8 spaces to the right each time it is pressed.

CTRL key (Control)

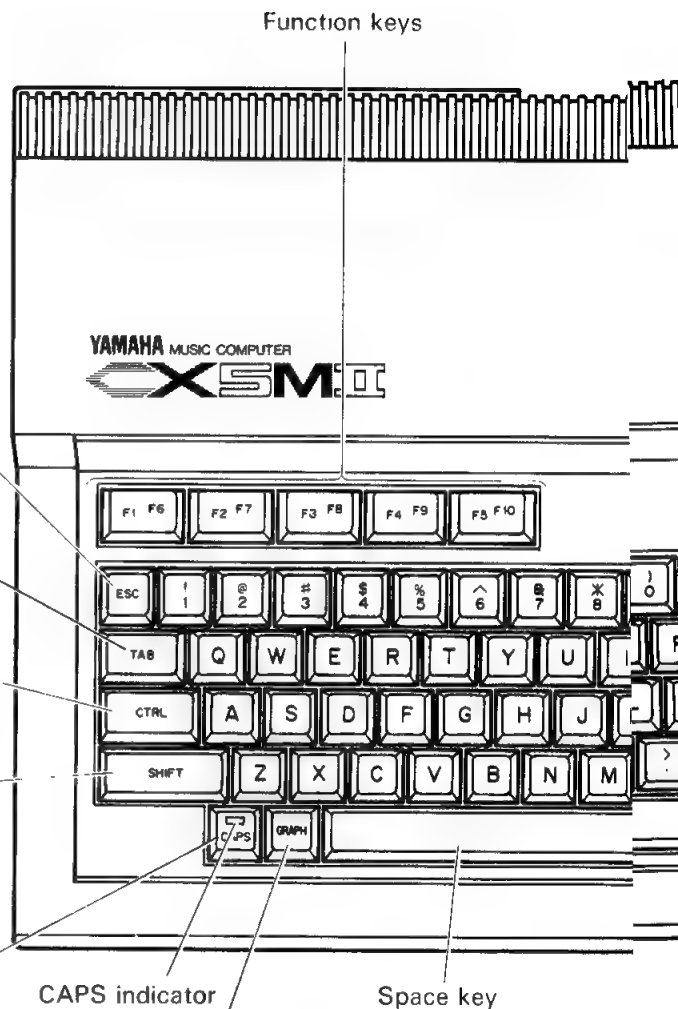
In combination with other keys, can be used to execute special functions. (See Control Code Table)

SHIFT key

This key functions as a standard typewriter shift key. For any key which has two symbols marked on it, shift function will access the upper case characters. The **SHIFT** key has no effect when the **GRAPH** key is being held down.

CAPS key

This key functions similarly to a "shift lock" key on a standard typewriter, except that punctuation marks and numeric keys are not shifted. An indicator lights when the key is pressed, for visual confirmation of this mode. Pressing the key again cancels the mode, and the indicator goes out.



GRAPH key

The keyboard layout diagrams included in this manual show which keys on the keyboard are assigned special graphics characters as well as alphanumeric characters. These characters are accessed (displayed on the screen) when the corresponding key is pressed simultaneously with the **GRAPH** key.

BS key (Back space)

When the **[BS]** key is pressed, the character to the immediate left of the cursor is erased, and the cursor will move to the left by an amount corresponding to the number of characters erased.

Power indicator

SELECT key

This key has no direct function when the CX5MII is used strictly as a Basic computer. It does serve important functions when the CX5MII is used with a Yamaha software cartridge or when the "call music" command is invoked. The function of the **[SELECT]** key within each particular software package will be explained in the operating manual of that software package.

STOP key

Pressing the **[STOP]** key together with the **[CTRL]** key will stop a program while it is running.

CLS HOME key

Pressing the **[CLS HOME]** key while holding down the **[SHIFT]** key will clear the screen display, and return the cursor to the upper left hand corner of the screen (home position).

INS key (Insert)

When editing text displayed on the screen, the **[INS]** key allows you to insert characters at any point on the screen. When the **[INS]** key is pressed, the cursor will shrink to half its normal size, allowing characters, numbers and symbols to be inserted between the cursor and the character displayed to its left. Pressing the **[RETURN]** key, space key, or **[INS]** key again cancels the insert mode and restores the cursor to its original size.

DEL key (Delete)

When the **[DEL]** key is pressed, the character on the display screen where the cursor is positioned is erased, and the entire line to the right of that character moves left by an amount corresponding to the number of characters erased.

Cursor keys

These keys will move the cursor one character space or one line in the direction indicated by the arrow on the key. Pressing a cursor key repeatedly will move the cursor in the direction indicated by an amount equivalent to the number of times the key is pressed. The cursor keys have other special functions when the CX5MII is used with a Yamaha software cartridge.

RETURN key

Pressing this key "enters" a command statement and returns the cursor to the beginning of a new line.

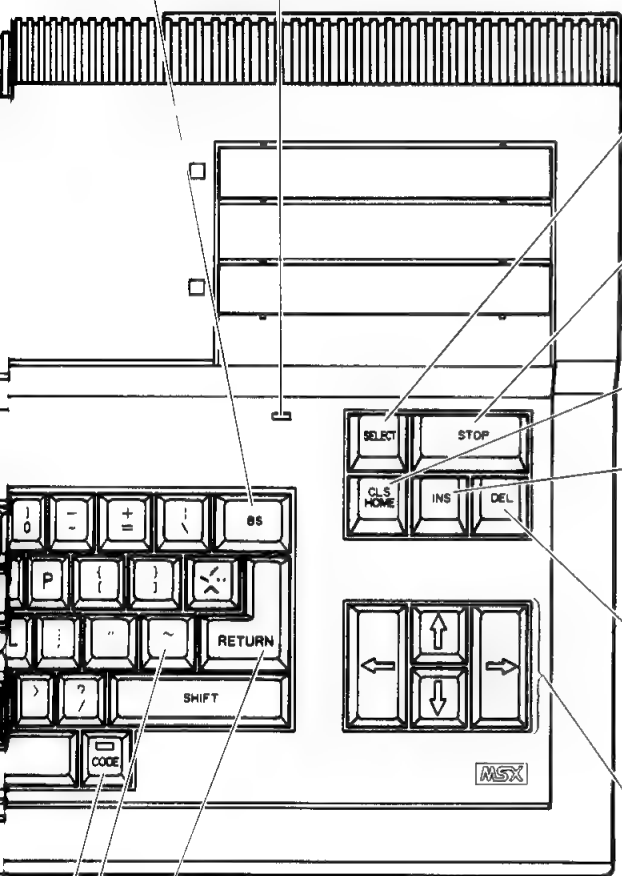
NOTE:

Only the CX5MIIIE has this key.



CODE key

Pressing the **[CODE]** key together with the appropriate key produces a second set of characters such as Greek, German, French, etc.



USING A ROM CARTRIDGE, EXTERNAL ROM PACK

Using a ROM Cartridge

Insert the cartridge as illustrated.

CAUTION:

Be sure that the power switch of the main unit is turned off before inserting a ROM cartridge. Remember that turning off the power will erase all programs contained in the computer memory, so if you have been writing a program you may wish to save the data on a cassette tape first. (see p.16)

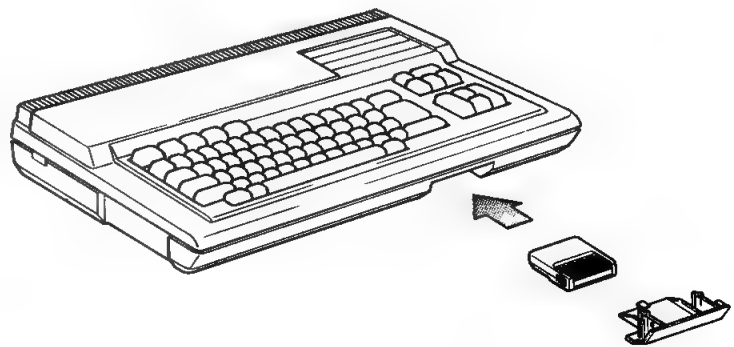
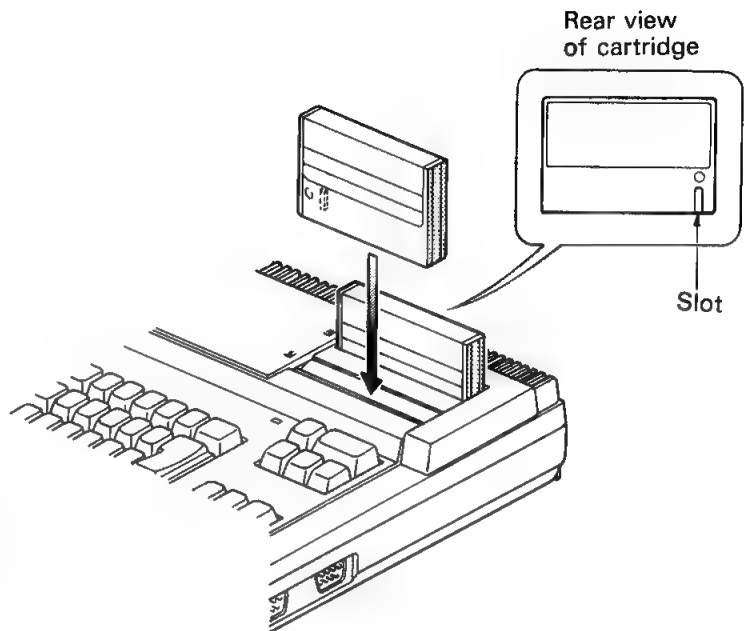
1. You will find the ROM cartridge slot on the upper panel of the computer. Following the accompanying illustration, insert the appropriate cartridge into the slot, with the cartridge aligned as shown.
2. Normally, the cartridge slot is covered by a protective flap. Simply push the cartridge through the flap and press it firmly in place. Then turn on the CX5MII power switch.
3. For directions concerning the screen display and the operation procedures, consult the instruction manual supplied with the ROM cartridge.

NOTE:

When shutting off the computer/sound system, turn off power to the CX5MII first. NEVER remove a ROM cartridge from the upper slots while the power is on. Make sure power is off before inserting or removing ROM cartridges; you might "get away" with this once or more, but it is possible that you might damage the CX5MII or the cartridge.

Using the External ROM pack

Before inserting a External ROM Pack, (front side), make sure that the power is turned off. Check that the correct side is up, and gently and firmly push it into the slot. Do not remove the ROM Pack while the power is still on. Doing so could damage both is and the MSX computer. For operation of the included FM Voicing Program ROM Pack, see the separately included FM Voicing ProgramII (YRM-502) manual.



SAMPLE PROGRAMS

The following are simple Basic programs that demonstrate the structure and flow of a Basic computer program. In order to become familiar with the CX5MII and the keyboard, try entering the programs and running them. When in the MSX Basic mode, the screen should appear as follows:

Type in the program just as it appears here, then type the command "run", followed by **RETURN**. If the program has been correctly entered, it should run properly. If not, type LIST and **RETURN** to list the program on the screen. Find your error and correct it, using the cursor keys, **INS** key, **DEL** key, etc. to edit on the screen. Then try to run it again.

```
10 SCREEN 2
20 CLS
30 X = INT ((RND (1)) * 250)
40 Y = INT ((RND (1)) * 180)
50 C = INT ((RND (1)) * 16)
60 R = INT ((RND (1)) * 20)
70 CIRCLE (X, Y), R, C
80 X = INT ((RND (1)) * 250)
90 Y = INT ((RND (1)) * 180)
100 C = INT ((RND (1)) * 16)
110 LINE -(X, Y), C, BF
120 CIRCLE (X, Y), R, C
130 GOTO 30
```

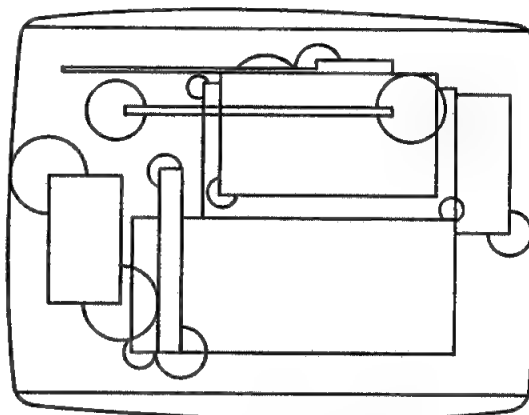
This program will draw circles and boxes of many different sizes onto the screen in 15 colors.

NOTE:

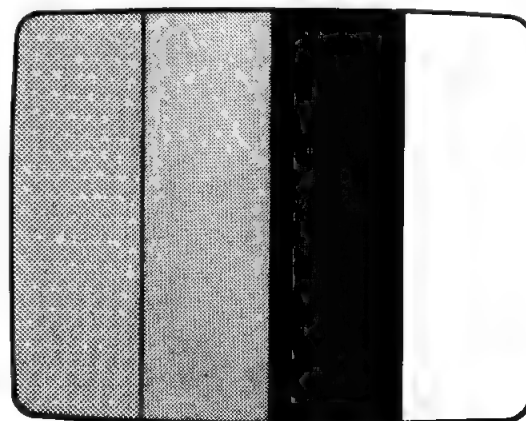
When entering the sample program, be sure to press the **RETURN** key at the end of each line. Otherwise, the computer will not recognize that you have entered a program line.

Also, when correcting the program displayed on the screen, the computer will not recognize that you have made a correction unless you press **RETURN** while the cursor is somewhere on that line.

Programs 1 and 2 have an endless loop in the last line. When you want to stop the program, press **STOP** while holding down **CTRL**.



```
10 CLS : SCREEN 2, 3, 0
40 LINE (0, 0) - (63, 192), 2, BF
50 LINE (64, 0) - (127, 192), 4, BF
60 LINE (128, 0) - (191, 192), 8, BF
70 LINE (192, 0) - (255, 192), 15, BF
80 GOTO 80
```



If you want to save this program for later use or study, please refer to the section on cassette save/load operations for instructions on how to save it on cassette tape. If you enter another program, it will write over the first one, so the first program must be cleared from memory. This is done by entering the command "new" (do not type the quotation marks) and pressing **RETURN**. The new program will display four color bars (green, dark blue, red, white) onto the screen. Changing the color numbers (2, 4, 8, 15) of lines 20 through 50 will enable color bars of the designated color to be drawn.

This program will play a short musical phrase.

```
10 BEEP
20 A$ = "T180ggagL2go5L4cdeedL1cL4eeefL2dL4edL1c"
30 B$ = "o2T180L1cgafcgL2fL4edL2c"
40 PLAY A$, B$
```

CASSETTE SAVE/LOAD OPERATIONS

1. Connections to the CX5MII

Please refer to the system connections diagram earlier in this manual, and make the proper connections. For cassette recorders that are not equipped with a remote terminal, only connect the microphone and the earphone (or AUX speaker) jacks.

2. Saving Programs to Cassette Tape

Turning off the power of the CX5MII will erase everything in memory; that is, the sample program you have just typed in. To keep this program for later use, it should be saved on cassette tape in the following manner:

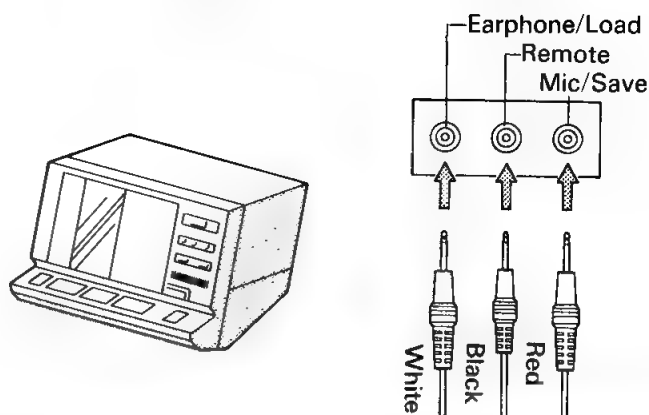
- (1) Place an appropriate tape in the cassette tape recorder.
- (2) press the **RECORD** and **PLAY** keys of the cassette tape recorder simultaneously, activating the recording mode.
If the cassette tape recorder is not equipped with a remote terminal, set the cassette tape recorder to the recording mode just before pressing the **RETURN** key in the next step.
- (3) Type **CSAVE**, followed by a quotation mark (") and the program name. A second quotation mark at the end of the program name is not necessary. Then press the **RETURN** key.

The program name should not exceed 6 characters in length. Upper case and lower case letters and numbers may be used for a program name. We recommend that you make note of the program name and its location on the tape (counter position) for future reference. **Upper and lower case characters are significant.**

- (4) The CX5MII will make a clicking sound as a relay operates, and the cassette tape recorder will begin to operate (when using the remote terminal).
- (5) After the program has been saved, OK will be displayed on the screen and the cassette tape recorder will stop.

(If the cassette tape recorder is not equipped with a remote terminal, the tape will not stop. Manually press the **STOP** button of the cassette tape recorder following the OK display on the screen.)

To prevent accidental loss of valuable programs, be sure to make at least one back-up of each program on a separate tape. Do this directly from the computer, as above, not by copying to tape. Tape copies are subject to degradation which may render them unusable.



Operation	Cassette recorder	Data recorder
Save	Play + Rec	Save
Load	Play	Load

csave "GAME 2"

csave "GAME 2"
OK
■

- (6) After the program has been saved, rewind the tape, press the **PLAY** button, and then type in the **CLOAD?** command for verification. (Do not leave the **"?"** otherwise data stored in the computer may be erased immediately.) If the data has been correctly saved on tape, the screen will show:

FOUND: (file-name)

OK

and the tape will stop. If the data has not been correctly saved, the screen will show:

Verify error

OK

If this happens try to save again.

3. Changing the Cassette Baud Rate

Baud rate means the speed at which data is transmitted or received. If you don't specify the baud rate for cassette save, the CX5MII will choose 1200 bps.

The baud rate of the cassette can be changed by the appropriate command. During program saving, set the following:

csave "(program name)" (for 1200 bps)

csave "(program name)",0 (for 1200 bps)

csave "(program name)",1 (for 2400 bps)

A higher baud rate requires better frequency response of the tape recorder and may be unusable due to data errors. Lower baud rates require more time to save and load programs, but may be more reliable with many recorders.

The cassette load baud rate is automatically selected.

4. Loading Programs from Cassette Tape

- (1) Set the volume control to slightly higher than the center position, and if the unit is equipped with a tone control, also set this control to slightly past the center position for more treble (high frequency) response.
- (2) Place a cassette tape containing the program to be run into the cassette tape recorder.
- (3) Press the **PLAY** button of the cassette tape recorder.

If the cassette tape recorder is not equipped with a remote terminal, press the **PLAY** button after first carrying out the following two steps.

```
MSX BASIC version 1.0
Copyright 1983 by Microsoft
28815 Bytes free
OK
■
cload "GAME 1"
```

- (4) Press the F7 function key (F2 function key while holding down the **SHIFT** key); cload" will be displayed on the screen, an abbreviation for cassette load.
- (5) Following cload", enter the name of the program to be run (normally printed on the case label of the cassette tape) from the keyboard. For example, if the name of the program to be run is GAME 1, the line should read: cload "GAME 1" (the second quotation mark is optional). Then press the **RETURN** key.
- (6) The CX5MII will make a clicking sound as its relay activates the REMOTE control cable, and the cassette tape recorder will begin to operate (assuming the remote terminal is used).

NOTE: —

The program name should be entered exactly as it is listed on the case label of the cassette tape. The program will not be loaded properly unless spaces are entered as spaces, lower case characters entered as such, etc.

- (7) If, during the process of searching for the target program, a program with another name is found (for example "GAME 1" was to be loaded, but a program called "SOUND 1" was found by the computer before finding "GAME 1") skip: SOUND 1 followed by nontarget program has been found. In the meantime, the computer will continue to search for "GAME 1".

5. Loading when the Name of the Program is Unknown

- (1) If the **RETURN** key is pressed without specifying a program, the next program found on the tape will be loaded.
- (2) If you wish to know the names of all programs recorded on the tape, simply enter a simple program name that is not recorded on the tape (for example "UNKNOWN"). Since that program is not on the tape, the skip function will display the name of each program in turn.

```
cload "GAME 1"
Found: GAME 1
OK
■
```

```
cload "GAME 1"
skip: SOUND 1
```

```
cload "UNKNOWN"
skip: GAME 1
skip: GAME 2
skip: GAME 3
skip: SOUND 1
```

DISK SAVE/LOAD OPERATIONS

Starting DISK BASIC

1. Firmly insert the disk drive interface cartridge into a cartridge slot. (See the disk drive instruction manual.)
2. Turn the disk drive power on. Then turn the video monitor and computer power on. The following message will appear on the screen;
Enter date (mm,dd,yy):
3. Press **RETURN**. The screen will change to the display at right, and Disk BASIC is now active.

NOTE:

When you turn the power on, it will ask you for the date, but press **RETURN** without entering anything. Even if you enter the date, it will not be remembered in MSX-Disk BASIC.

IMPORTANT NOTE:

When using Disk BASIC, there are two things that you must always remember. On the disk drive, there is a small red LED marked "IN USE." This indicates that the disk drive is moving.

- When the LED is on, do not remove or insert disks.
- When the LED is on, do not turn off the disk drive power.

If you do either of these, there is a possibility that data on the disk may be lost forever. Please be careful.

```
MSX BASIC version 1.0
Copyright 1983 by Microsoft
23430 Bytes free
Disk BASIC version 1.0
OK
```

Formatting a disk

Before you can use a new disk in MSX-Disk BASIC it must be formatted. This sets up the disk so that you can read and write data to and from it. Formatting a disk will erase all the data that was on it before.

In MSX-Disk BASIC, you can do this to a disk by the CALL FORMAT <_FORMAT> command. When you type

CALL FORMAT [Return]

you will be asked which drive's disk to format.

Drive name? <A, B>

When you have only one drive, press [A]. Then it will ask you for the type of disk. Press 1 or 2. (See disk package) Now it will say;

Strike a key when ready

Insert a new disk in the drive and press any key on the MSX keyboard. When formatting is finished, the screen will show.

Format complete
OK

```
CALL FORMAT
Drive name? (A, B) A
```

- 1 - Double sided
- 2 - Single sided

```
? 2
Strike a key when ready
Format complete
OK
```

NOTE:

If the display is showing "Strike a key when ready" and you decide to back out, you can cancel the FORMAT command by pressing **CTRL** + **STOP**. (But if you have mistakenly specified drive B when you really only have one drive, this will not work. Remove the disk and press a key, which will cause a "Disk error".)

Saving a program from the CX5MII to disk

Let's try saving a program onto disk. Type in one of the sample programs shown on page 15. Now we will store this on a disk using the SAVE command, as follows;

```
SAVE "[device name] file name [.type]
```

(Items in [] are optional.)

The device name is A: (disk drive A). Let's name the program PROG1. We will explain about the type later, but for now just enter .BAS (indicating a BASIC program.) Type in the following and press **RETURN**. (In this case you omit A:.)

```
SAVE "A: PROG1.BAS"
```

The disk drive will whirl for a short time and the screen will show "OK." Your program has been saved onto the disk.

You can check to see that the program has actually been saved by using the FILES command. (See p.40)

Loading a program from disk into the CX5MII

Erase the program in the CX5MII memory by using the NEW command. Now, let's load the program from the disk into the memory using the LOAD command.

```
LOAD "[device name] file name [.type]
```

(Items in [] are optional)

Type in the following and press **RETURN**. (In this case, you may omit A:.)

```
LOAD "A: PROG1.BAS"
```

When loading is finished, the display will show "OK". Using the LIST command, check to see that your program is back in the CX5MII memory.

Checking the contents of a disk (FILES)

Using the FILES command will display the names of all the files on a disk. Simply type

```
FILES
```

and press **RETURN**. If the disk contains three files (PROG1, PROG2 and PROG3), the display will look like this.

```
10 -----  
20 -----  
30 -----  
SAVE "A:PROG1.BAS"  
OK
```

```
LOAD "A:PROG1.BAS"  
OK  
LIST  
10 -----  
20 -----  
30 -----
```

```
FILES  
PROG1 .BAS PROG2 .BAS  
PROG3 .BAS  
OK
```

A note about file names and types

The file name may be up to 8 characters long, and may include numerals, but the first character must be a letter of the alphabet.

The file type is up to 3 letters long, and is separated from the file name by a (.) period. When there are many files on a disk, this makes it easy to tell what kind of file it is. For instance, you know that PROG1.BAS is a BASIC program. A data file might have the type .DAT. You may omit the file type, but it is often very helpful to include it. If you enter a file name of more than 8 letters, the 9th, 10th and 11th letters become the file type and a period is automatically inserted.

It does not matter whether you enter the file name in lower-case or capital letters. File names and types are automatically converted into capital letters.

Erasing a file from a disk

By using the KILL command, you may erase any file you no longer need.

KILL "[device name]" file name [. type]"

(Items in [] may be omitted.)

When you type in this command and press **RETURN**, the file you specified will be erased. For example, if there were 3 programs (PROG1, PROG2, PROG3) on the disk and you "KILLed" PROG1, the contents of the disk before and after would be as shown on the screen at right.

```
KILL "A:PROG1.BAS"  
OK
```

```
FILES  
PROG2      .BAS  PROG3      .BAS  
OK
```